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STATE WATER RIGHTS LAW AND GEOTHERMAL
HYDROTHERMAL COMMERCIALIZATION IN
FIVE PACIFIC RIM STATES

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CHAPTER ONE: Introduction — State Water Rights Law And
Geothermal Hydrothermal Resources In The
Five Pacific Rim States

Of all the legal and institutional problems that have confronted the commercialization of geothermal resources, the barrier posed by water rights law in all of its various manifestations may be the most complex and the most difficult to unravel.

Initially, the area is problematical due to the jurisdictional maze it presents. Unlike tax or land law, e.g., there is no clearly established line of demarcation between Federal and state authority. The key question, of course, involves water rights on and under the Federal lands themselves. Literally a century of legislation, controversy and U.S. Supreme Court decisions have failed to clearly define the respective spheres of influence in a wide variety of water use contexts. Thus a geothermal developer who has a Federal geothermal lease may nonetheless have to deal with one of the Western state water rights acquisition regimes in order to explore and develop his prospect.

The jurisdictional riddle increases if the potential geothermal commercialization target is located on Indian lands. An unresolved and oftentimes emotional knot of questions come into play here, including the tribes possible "aboriginal" water rights, Federal (so called) "Reserved" water rights, the sovereign immunity of the Federal government from suit

in state courts, tribal immunity from many state powers and a clash of parallel court systems, each with its own statutory grant of jurisdiction.

A private land lease offers little solace either. Obtaining state water rights may still be required, with no assurances that their acquisition will be on a scale adequate to allow economically viable geothermal development. This is as true for direct use as it is for electric applications.

The report which follows does not analyze in depth the difficulties posed by the ongoing Federal-state conflict. It only sketches that struggle, focusing instead on the water rights doctrines of the five Pacific Rim states — California, Oregon, Washington, Alaska and Hawaii — and their possible impact on geothermal development.

Nor is any effort made to investigate the myriad complications arising from the interrelationships of various Native-American water rights with those granted by the states. That subject, as well as the other unique features of geothermal development on "Indian" lands, is beyond the scope of this paper.

There is also no exposition of the problems posed by the water rights laws of the Western, non-Pacific states with acknowledged geothermal potential. That, too, is outside of our charge in this report.

CHAPTER TWO: State Water Rights Law — Some Background

In order to grasp the complexities of the five water rights systems which we shall be analyzing below, it is necessary to have a basic understanding of several key terms and concepts used in allocating rights to surface and ground waters.

Surface Waters:

First of all, a water right is a right to the use of water accorded by law. Ownership of the water is not a factor. A water right is a usufructary right in the classic sense. There are two basic kinds of water rights involved with surface waters: riparian and appropriative. Riparian rights were developed early on in the English Common Law. They grant to the owner of land through or next to which a "watercourse" (surface stream) passes the right to divert and use as much of the water as he deems necessary for the enjoyment of his property. Riparian rights are therefore appurtenant to the real property itself. Crucially, they do not depend upon actual use by the landowner himself. This strict English common law principle has been modified, as we shall see, to limit the riparian landowner to a "reasonable", i.e., non-injurious to lower riparian, use. For our purposes, one must keep in mind that the riparian right relates almost totally to water rights in surface "watercourses". The latter is defined as a "definite stream of water in a definite natural channel, originating from a definite source or sources

of supply."^{1/} It also includes the "underflow" of such streams. Thus the terms "watercourses" and "surface waters" are virtually synonymous. It was therefore logical for the riparian right to arise in England, with its heavy rainfall and abundant streamflows.

Appropriative rights, in contrast to the English riparian system, grew out of the physical and economic necessities of the Western United States during the mid to late 19th Century. The available water supply in the region was inadequate to carry on the demands of industry (mostly mining) and agriculture. In fact on many occasions those lands most likely to be developed (as in the Gold Rush area of California and the Mormon colonization of Utah) were not located near those "watercourses" which did exist in the region. Throughout the entire area the customs, rules and regulations which were developed, in the absence of any official law, expressed a remarkable uniformity. A miner or settler wishing to make a valid appropriation of water had to: (1) post and record a notice of his intention to divert a specific quantity of water; (2) actually divert the water; and (3) put it to a "beneficial use" with a reasonable degree of diligence. Once an appropriative right was thus perfected, it could be lost only through failure to continuously exercise it or by a violation of the local rules. The key to understanding the appropriative water right and distinguishing it from the

riparian right is the principle of "first in time, first in right". Pure diligence was the key. Landownership was irrelevant, particularly since during this period almost all of the land in question was "owned" by the Federal government anyway. Thus all of the pre-1866 mining claims established (through an almost identical system) on those public lands were trespasses and absolutely illegal.

Ground Waters:

The appropriative right and, in some jurisdictions, a land of "riparian" right as well, can be established for either watercourses (surface waters) or ground waters. Ground waters are classified into two categories: "definite underground streams" or "percolating waters". Rights to use "definite underground streams" are governed by the same legal principles as surface "watercourses", meaning that a riparian right could conceivably be obtained therein, although appropriation is the method more commonly utilized in the West.

"Percolating ground waters", by contrast, are defined as "wandering drops of water, moved by gravity or changing conditions of humidity, which follow no particular course."^{2/} The universal presumption is that ground waters are percolating until the existence of a definite underground stream can be shown. Rights to use "percolating waters" lie in the overlying landowner, under one of another variation of three basic rules: (1) the English rule of absolute ownership; (2) the American

rule of reasonable use; or (3) prior appropriation.

The first two concepts are best understood as analogous to riparian rights in surface waters. The English rule holds that the owner of overlying lands is also the holder of the rights to use all the percolating waters thereunder. He "may withdraw as much as he desires, regardless of the effect on other wells or of the reasonableness of his use."^{3/} You will note that this formulation parallels the ownership theory of the overlying landowner in hard rock minerals and oil and gas, and the subsequent judicial adoption of the "rule of capture" to govern development of the latter.^{4/}

Not surprisingly, Texas is the geothermal-oriented state which holds most closely to the absolute English Rule. There is even a statutory statement to that effect.^{5/} Texas court cases throughout this century have uniformly held to that doctrine as well.^{6/} The state's highest court has even held that only those principles developed at common law limit the right, i.e., malicious taking of water and willful and wanton wastage.^{7/}

The American amendment to the English rule limits the overlying landowner to a "reasonable use" of percolating ground waters. Arizona provides the purest example of this second doctrine of percolating ground water ownership.^{8/} Below we shall discuss in detail the unique California twist given to this doctrine — the so-called "correlative rights doctrine."^{9/}

The third avenue for acquiring rightful possession of percolating ground waters is appropriation, a method we have discussed above. Many Western states provide by statute for the appropriation of all ground waters. These include Alaska,^{10/} Oregon^{11/} and Nevada.^{12/} The former two are discussed below in Chapters V and VI, respectively.

Thus we can see that both the English rule and its American counterpart bear a strong resemblance to the land ownership - dependent riparian right in surface waters. In Hawaii, as we discuss below,^{13/} they are virtually synonymous.

CHAPTER TWO FOOTNOTES

- 1/ W. Hutchins, H. Ellis, P. DeBraal, Water Rights Laws In The Nineteen Western States, Vol. 1 (U.S. Dept. of Agriculture Misc. Pub. No. 1206 (1971)), at p. 22. This basic description of water rights law concepts follows their work. Hereinafter cited as "Water Rights Laws".
- 2/ Los Angeles v. Hunter, 156 Cal. 603 (1909).
- 3/ Water Rights Law, op. cit., at Vol. 1, p. 634.
- 4/ See Williams & Meyers, Oil And Gas Law (M. Bender).
- 5/ V.T.C.A., §5.021, formerly Tex. Rev. Civ. Stat. Ann. art. 7880-3c(D) (1954),
- 6/ See Houston & T.C.R.R. v. East, 98 Tex. 146, 81 S.W. 279 (1904), reversing 77 S.W. 646 (Tex. Civ. App. 1903).
- 7/ Corpus Christi v. Pleasanton, 154 Tex. 289, 276 S.W.(2d) 798 (1955).
- 8/ Bristor v. Cheatham, 75 Ariz. 227, 255 P.2d 173 (1953).
- 9/ See Chap. IV, infra.
- 10/ Alaska Stat. §§46.15.010, 46.15.040(a) and 46.15.260(5).
- 11/ Oregon Rev. Stat. §§ 537.515 & 537.525.
- 12/ Nev. Rev. Stat. §§ 534.010 & 534.020.
- 13/ See Chap. VIII, infra.

CHAPTER THREE: Federal Water Rights - Do They Exist?

And Can They Benefit The Geothermal Developer?

In enacting the Desert Land Act of 1877,^{1/} Congress, in order to encourage settlement of the vast, mostly arid expanses of the West, made the following concession to the Western States:

" . . . all surplus water over and above such actual appropriation and use [by the entryman], together with the water of all, [sic] lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining, and manufacturing purposes subject to existing rights."^{2/} On its face, the statute seemed to be an open invitation to the Western territories and states to regulate appropriative water rights on the public lands of the West. It was an "invitation" they eagerly accepted.

As we shall discover below, this 1877 Federal statute and several others preceding it^{3/} also constituted official Federal acquiescence in the activities of miners and other settlers who had been illegally trespassing on Federal lands for years and appropriating the waters thereon for their own use. It is a curious episode in modern legal development. The miners themselves set up their own code of rules for acquiring both land (mining claims) and the water needed to

work those claims and both state and Federal governments eventually codified these local usages and customs, conferring upon them post hoc legality.

First it was the U.S. Congress, which consented to this massive trespass by the miners. Then the states enacted water rights laws which were nothing more than legislative codifications of then-quarter century old mining comp practices.^{4/}

So strong, in fact, was the psychological link between the appropriative method of procuring water rights and the public domain that the courts of several Pacific states held early on that such a practice was inapplicable elsewhere, i.e.,^{5/} on non-Federal lands.

Inevitably in such an arid and semi-arid region, conflicts arose between users on the public lands who had not complied with state requirements and those deriving their claim to use of the water from rights perfected under state law. Given the jurisdictional complexities involved, the disputes found their way to the U.S. Supreme Court. Although the first high court case resolving such a dispute did not involve Indian "reservation" lands,^{6/} the next several did. Best known of these cases is Winters v. U.S.^{7/} There the U.S. Supreme Court for the first time leaned on the Constitution grant of Congressional power over "Property belonging to the United States; . . ."^{8/} in holding that, in a treaty creating the Fort Belknap Indian Reservation in Montana, Congress had "impliedly intended" to "reserve" the waters of a bordering stream for irrigation and other uses on the reservation. This meant that the Indian

rights to use the water were protected against and superior to rights acquired subsequently under State law. As the high court put it: "The power of the Government to reserve the waters and exempt them from appropriation under the State laws is not denied, and could not be."^{9/} In any event, this 1908 decision is generally credited with initiating the "Federal Reserved Rights Doctrine" of water rights, also known, predictably, as the "Winters Doctrine".

A heated series of cases followed Winters. Some seemingly cut away at the original Winters Doctrine. In California Oregon Power Co. v. Beaver Portland Cement Co.,^{10/} e.g., the Supreme Court stated that: "the Desert Land Act does not bind or purport to bind the states to any policy. It simply recognizes and gives sanction, insofar as the United States and its future grantees are concerned, to the state and local doctrine. . . . it effected a severance of all waters upon the public domain, theretofore not appropriated, from the land itself."^{11/} The Court then went on to hold that the Desert Land Act, as construed, applied to all of the public domain in the 12 named States and Territories.^{12/} But this was not the last word. In recent years, most of the decisions arising from this conflict have been decided in favor of "Federal reserved rights" holders.

In 1955, in the "Pelton Dam Case",^{13/} the Supreme Court held that water rights on the Federal lands in question were not under the jurisdiction of the State of Oregon because they were "reserved" by the U.S. for designated public purposes

and thus not "public lands" within the meaning of Congress' use of that term in the Desert Land Act.

The case was also significant in that it involved both "reserved" Indian lands and "reserved" non-Indian lands (namely, lands reserved by the Federal Power Commission for a hydroelectric power site). The Court, in construing the applicable portions of the Federal Power Act,^{14/} held that the term "reservations" would include any lands "withdrawn, reserved or withheld from private appropriation and disposal under the public land laws."^{15/}

Eight years later, a provision of the Boulder Canyon Project Act of 1929 was construed by the high bench as a valid reservation by Congress of the navigable waters of the Colorado River for the use of the contiguous Federal reserved lands (both Indian and non-Indian), notwithstanding the fact that title to the lands underlying those waters was clearly vested in the States.^{16/} An undefined mixture of Congressional powers under both the Commerce and Property Clauses was cited as authority.^{17/}

Finally, the "reserved rights" or "Winters" doctrine was formally extended to ground, rather than surface waters just six years ago.^{18/} This extension has led some commentators to construct a theory under which federal geothermal lessees would obtain "reserved" water rights by virtue of the various Department of Interior actions "withdrawing" and "reserving" public lands for the purposes of geothermal leasing and development.^{19/}

Unfortunately, any attempt by D.O.E. or the industry to obtain official administrative or judicial acquiescence in such a theory will coincide with President Carter's announced intentions to begin a heavily water-consumptive crash program for synthetic fuel development in the West.^{20/} The political fallout from the joinder of the two actions would be furious. Western spokesmen have been vociferous in their criticism of Carter's water policies for several years.

For the purposes of this paper, we shall assume that neither the "Winters Doctrine" nor some as yet undefined mix of Federal Commerce, Property and Supremacy Clause powers will, in the near future, serve to convey valid water rights to geothermal developers holding leases on Federal lands in the five Pacific states. We shall therefore turn now to an analysis of the possible necessity of obtaining water rights for geothermal development under the existing laws of those states. In our exposition of the water rights laws of California, Oregon, Washington, Alaska and Hawaii, we shall focus exclusively on rights to "percolating ground waters," since these are the most relevant to geothermal hydrothermal resources development. Our basic assumption is that, to the extent that geothermal fluids are classified as "water" by the various Western states, it would most likely be that specific water law category which would be applicable to them.

CHAPTER THREE FOOTNOTES

- 1/ 19 Stat. 377 (1877), 43 U.S.C. §321 et. seq..
- 2/ 43 U.S.C. 321 (emphasis supplied).
- 3/ Namely 14 Stat. 253 (1866), 43 U.S.C. 661 and 16 Stat. 217 (1870), 43 U.S.C. 661.
- 4/ The State of California's first water laws, enacted in 1872 as part of the Civil Code, were taken in large part from the procedures in the Harris Mining district in the Sierras. See Cal. Civil Code §§ 1410-1422 (1872).
- 5/ See, e.g., Benton v. Johncox, 17 Wash. 277 (1897), Lewis v. McClure, 8 Oreg. 273 (1880), Curtis LaGrande Water Co., 20 Oreg. 34 (1890); Carson v. Gentner, 33 Oreg. 512 (1888), Simmons v. Winter, 21 Oreg. 35 (1891).
- 6/ See U.S. v. Rio Grande Dam & Irrigation Co., 174 U.S. 690 (1899). Here the assertion of Federal power was Congressional hegemony over navigation. Proprietary land rights were discussed as dicta only.
- 7/ 207 U.S. 564 (1908). See also U.S. v. Winans, 198 U.S. 371 (1905), which concerned Indian fishing rights.
- 8/ U.S. Const. Art. IV, §3.
- 9/ 207 U.S. 564 at p. 577.
- 10/ 295 U.S. 142 (1935).
- 11/ ibid., at p. 579 (emphasis added).
- 12/ ibid., at p. 160-163.
- 13/ FPC v. Oregon, 349 U.S. 435 (1955).

Chapter Three Footnotes

14/ 16 U.S.C. §§ 796(1) and (2).

15/ 349 U.S. 435, at p. 444.

16/ Arizona v. California, 373 U.S. 546 (1963).

17/ ibid., at pp. 597-598.

18/ U.S. v. Cappaert, 426 U.S. 128 (1974).

19/ See O. Olpin & A.D. Tarlock, "Water That Is Not Water", 13 Land & Water L. Rev. 391 (1978) at pp. 413-421. The withdrawals in question can be found at 32 Fed. Reg. 2588 (Feb. 3, 1967), as amended, 32 Fed. Reg. 4506-4508 (March 21, 1967).

20/ S.932, The Synthetic Fuels Development Act of 1980.

CHAPTER FOUR: California Water Rights Law: A Light At The
Bottom Of The Well?

Since it is the situs of the most intense geothermal hydrothermal development, California's importance to near-term resource commercialization can not be overstated.^{1/} At least one noted commentator has already indicated that hydrothermal resources might fall under the aegis of California's ground water appropriation laws.^{2/} It is our contention here that the key to freeing geothermal hydrothermal resources from the tentacles of California ground water appropriation lies in the judicially-created "doctrine of correlative rights" in "percolating ground waters", not in a much-ballyhoed statutory provision.

(a) Statutory Provisions:

Before we examine the detailed California and Federal court decisions pertaining to correlative rights, it may be useful to note several relevant legislative pronouncements.

The California water appropriation law is set out in the state Water Code.^{3/} The key provision states: "Whenever the terms stream, lake, or other body of water, or water occurs in relation to applications to appropriate water or permits or licenses issued pursuant to such applications, such term refers only to surface water, and to subterranean streams flowing through known and

.....^{4/}
definite channels." The California legislature has therefore taken great pains to statutorily recognize and approve numerous state court decisions holding that "percolating ground waters", (i.e., those not flowing in "known and definite channels") are not subject to statutory appropriation by permit of the State Water Resources Control Board.^{5/}

Thus the next Water Code section, which declares that "all water flowing in any natural channel, . . . , is hereby declared to be public water of the State and subject to appropriation in accordance with the provisions of this code,"^{6/} should not be viewed as an ominous spectre on the horizon of California's hydrothermal resources. There is a clear legislative intent to exclude percolating ground waters from the definition of state hegemony.^{7/}

There would therefore appear to be no real necessity for the much-ballyhoed "Certificate of Primary Purpose" statute.^{8/} A geothermal developer's right to use the hydrothermal fluids under applicable state law would be endangered only by a showing that they flowed in a "known and definite" channel. The "primary purpose" mechanism was enacted in 1967^{9/} and establishes, upon issuance of the "certificate by the State Geothermal Resources Board, a "rebuttable presumption that . . . [the geothermal developer] has absolute title to the geothermal resources

reduced to his possession from such well or wells."^{10/}

The need for "title" is also unclear, since no water right other than that of the overlying owner conveys "title", only the rights to use. Other rights are purely usufructary. The "presumption", moreover, is easily rebutted by "a showing that the water content of the geothermal resources is useful for domestic or irrigation purposes without further treatment thereof, . . .".^{11/} But this is irrelevant as well. No aggrieved water rights holder would care whether or not the geothermal resources were or weren't "useful" for his purposes. He would only care that his "rights" were being usurped by a lowering of pressure, diminished flow, etc..

It should come as no shock that the "primary purpose" section has never been utilized. It is both unnecessary and off point. Decisions by California's highest court have already established a basis for the right to use hydrothermal fluids.

(b) Court Decisions:

During the period from the beginning of the Gold Rush and statehood (1848-1850)^{12/} to the turn of the century, California courts applied both the English rule of "absolute ownership" and the American rule of "reasonable use" to percolating ground waters.^{13/}

The key case enunciating the unique California rule

(actual two separate hearings on the same dispute) came after the turn of the century. It was Katz v. Walkinshaw.^{14/} Therein the California Supreme Court first rejected outright the English rule and adopted its American variant. Upon rehearing a year later, the high bench went a step further and, apparently as dictum, set forth a self-admitted novelty — the "California doctrine of correlative rights in percolating ground waters."^{15/}

Under this doctrine, "owners of lands overlying the same supply of percolating ground waters have equal rights therein-correlative rights—for use on their overlying lands."^{16/} Each owner's right is limited to "reasonable use" for the benefit of his overlying lands, providing the supply is adequate for all. If it is not, each is entitled to a "reasonable share."^{17/}

The "correlative rights" of the overlying landowners are not absolute, however. In addition to being limited by "reasonableness,"^{18/} there is the possibility that non-overlying landowners can appropriate percolating ground waters by simply diverting them, bypassing the statutory permit procedure.^{19/} "Prescriptive" appropriative rights can thus be obtained if such diversion is for a beneficial use and goes on for the statutorily-prescribed period^{20/} in an "open", "notorious" and "hostile" manner.

The validity of prescriptive rights to percolating

ground waters was settled in the landmark case of Pasadena v. Alhambra.^{21/} There an extensive ground water basin had been overdrawn annually for nearly a half century by both overlying owners and prescriptive appropriators. "Safe yield" had been exceeded in every year but two since 1913. The State Supreme Court upheld both the overlying and prescriptive rights and required all parties to limit themselves "by a proportionate reduction in the amount which each . . . had taken."^{22/}

Thus the geothermal developer in California who wishes to secure himself from possible entanglement in water rights law controversy and lengthy litigation would be well advised to secure from each of his lessors an explicit statement as to the use of their "correlative rights" in percolating ground waters, in addition to the right to develop their geothermal hydrothermal resources conveyed in each lease. Where more than one firm's land play is involved in a particular prospect area, a "unitization" agreement as to their total correlative rights would seem to be in order.^{23/}

The developer must also guard against the creation of prescriptive rights in the area by unchallenged appropriation. All nearby overlying uses or obvious diversions for use on non-overlying lands should be investigated to determine if they are based on something other than land

ownership. These should not be allowed to continue unchallenged.

Overlying landowners have rights paramount to those of appropriators.^{24/} They are also able to secure declaratory judicial relief stating both the paramount nature of their right and protecting it against future impairment.^{25/} Unless the amount being exported by an appropriator for use on non-overlying lands can be shown to be "surplus" to the reasonable needs of those lands overlying the ground water supply, its taking can be enjoined.^{26/} This is not true, of course, if said rights have been purchased, vested by adverse use for the prescriptive period, or condemned by an irrigation district, ditch company or other water entity.

On the other hand, any challenge by a prescriptive appropriator to overlying landowner rights would bear the burden of establishing that the geothermal fluids were really part of a subterranean watercourse "flowing through a known and defined channel."^{27/} It must be stated that this burden is not totally impossible to meet. Water and politics are often bedfellows. All the ground waters of the San Fernando Valley (north of Los Angeles) were once declared to be non-percolating, on the dubious ground that they "were slowly moving downward to outlet . . .".^{28/} This meant that they belonged to the City of Los Angeles

as a source of supply for the Los Angeles River, not to the overlying landowners of the Valley.

A federal or state lands geothermal lease in California would seem to convey ground water rights as well as one on private land. Either the U.S. or California (the lessors) would be the "overlying landowners" thereon.

Percolating ground water rights on mineral-severed lands, by contrast, might well be construed as privately-owned rather than the property of the U.S. since the private patentees are actually the "overlying" owners.

We are not here saying that securing an assignment of the percolating ground water rights of all lands overlying the geothermal reservoir will guarantee that the water rights bogeyman will stay away from geothermal's door. Many problems could still arise.

It simply may not be possible, for economic or other reasons, to obtain a grant of all those rights. The geothermal reservoir and the local ground water basins may, probably will not be contiguous. A diminution in pressure, flow, etc. to any surface or ground water user in the area will undoubtedly lead to litigation or threats of same. But the greater the geothermal developer's percolating ground water rights "position", the more likely that his project will survive such challenges, barring a clear cut showing of substantial interconnection.

CHAPTER FOUR FOOTNOTES

- 1/ See Site-Specific Legal And Institutional/Analysis Of The Barriers To Geothermal Hydrothermal Commercialization Present At Target Prospects In The Five Pacific Rim States (J.M. Energy Consultants, Inc. Rpt. No. 1014, Oct. 20, 1979).
- 2/ Remarks of Owen Olpin, Esq. to Natural Resources Section, ABA "Geothermal Workshop", San Francisco, California, (January 1978). The California surface and ground water appropriation scheme is set out at Cal. Water Code §§ 1200-1248.
- 3/ CAL. WATER CODE §1200 et. seq..
- 4/ CAL. WATER CODE § 1200 (based on Stats. 1913, Ch. 586, §42, 2d sentence, p. 1033, as amended by Stats. 1933, Ch. 357, §1, p. 955) (emphasis added).
- 5/ CAL. WATER CODE §§1250 et. seq.
- 6/ CAL WATER CODE §1201 (emphasis added).
- 7/ See Rank v. (Krug) U.S., 142 F. Supp. 1, remanded on other points 372 U.S. 609 (1956).
- 8/ CAL. PUB. RES. CODE §3742.2.
- 9/ Stats. 1967, Ch. 1398, §25.
- 10/ CAL. PUB. RES. CODE §3742.2.
- 11/ id.
- 12/ 9 Stat. 452 (1850).
- 13/ Water Rights Law, op. cit., Vol. II, at p. 635. See Gould v. Eaton, 11 Cal. 639, 44 P. 319 (1896) (English rule) and Cross v. Kitts, 69 Cal. 217, 10 P. 409 (1886) (American rule).

Chapter Four Footnotes

- 14/ 141 Cal. 116, 70 P. 663 (1902), 74 P. 766 (1903).
- 15/ See also Burr v. Maclay Rancho Water Co., 154 Cal. 428, 98 P. 260 (1908), 160 Cal. 268, 116 P. 715 (1911).
- 16/ Water Rights Law, Op. cit., Vol. III, at p. 210, citing Katz at 141 Cal., pp. 135-136.
- 17/ Cohen v. La Canada Land & Water Co., 142 Cal. 437 at pp. 439-440 (1904).
- 18/ See Peabody v. Vallejo 2 Cal. 2d 351 40 P2d 486 (1935).
- 19/ See San Bernardino v. Riverside, 186 Cal. 7, at pp. 20, 30-31 (1921).
- 20/ Cal. Code Civil Proc., §§ 318-324, Cal. Water Code §5003.
- 21/ 33 Cal. 2d. 908, 207 P2d 17 (1949), modifying 180 P2d 699 (Cal. App. 1947), cert. den., 339 U.S. 937 (1950).
- 22/ 207 P2d at pp. 32-33.
- 23/ Perhaps as an addendum to a unit agreement for the geothermal resources.
- 24/ Burr v. Maclay Rancho Water Co., op. cit..
- 25/ San Bernardino v. Riverside, op. cit..
- 26/ Corona Foothill Lemon Co. v. Lillibridge, 8 Cal. 2d. 522, 66 P. 2d. 443 (1937).
- 27/ Arroyo Ditch & Water Co. v. Baldwin, 155 Cal. 280, 100 P. 874 (1909).
- 28/ Los Angeles v. Pomeroy, 124 (597 (1899) .

CHAPTER FIVE: Alaska Water Rights Law-A Hole In The Statute?

The State of Alaska consists almost totally of Federal lands. Some 96.4% of the acreage of the state is in the hands of one or another Federal agency.^{1/} Originally purchased from Russia in 1867, some of these once all-Federal lands will be passed to the state as part of its statehood selections^{2/} as well as to the Alaskan Natives in settlement of their aboriginal land claims.^{3/} But the bulk (roughly 60%) will still be "public lands."

With its predominantly Federal history and strong mining tradition, Alaska early on adopted appropriation rules in its camps and settlements.^{4/} These rules were judicially recognized prior to the turn of the century.^{5/} In 1884, Congress extended its pardon of/acquiescence in trespassing mining claims to Alaska.^{6/} Later court decisions acknowledged this extension as applicable to appropriated water rights as well,^{7/} giving prior appropriators "the exclusive reasonable use thereof."^{8/}

Though Alaska also recognized the riparian right in a 1917 territorial statute,^{9/} only the appropriative right can now be obtained, in either surface or ground water, as a result of the passage of the "Alaska Water Use Act of 1966."^{10/} The statutory method set forth therein is the exclusive avenue of appropriation in the State.^{11/} However, the 1966 Act applies to "all surface water of the state, and subsurfaces occurring in a natural state, except mineral and medicinal waters."^{12/}

There would appear to be a clear exception then, in the Alaskan water rights laws that is applicable to hydrothermal fluids containing dissolved minerals. This is crucial, since virtually all future geothermal development in Alaska would otherwise be forced to undergo rigorous scrutiny by the State Departments of Environmental Conservation and Fish and Game,^{13/} as well as the regulations of the State Water Resources Board.

Thus a private, state, Native or federal geothermal lease in Alaska could be exempt from the provisions of the state's Ground Water Use Act on the ground that geothermal fluids are "mineral waters" and by definition not subject to regulation thereunder.

CHAPTER FIVE FOOTNOTES

- 1/ Public Land Statistics, BLM (U.S.D.O.I.) at p. 10, Table 7.
- 2/ 72 Stat. 339 (1958); 73 Stat. c. 16 (1959).
- 3/ Alaskan Native Claims Settlement Act.
- 4/ The first such rules are quoted in McFarland v. Alaska Perserverance Mining Co. 3 Alaska 308 (1907).
- 5/ See Noland v. Coon, 1 Alaska 36 (1890).
- 6/ Act of May 17, 1884, 23 Stat 24, Ch. 235 (1884).
- 7/ Revenue Mining Co. v. Balderston, 2 Alaska 363 (1905),
Miocene Ditch Co. v. Jacobsen, 2 Alaska 567 (1905).
- 8/ Revenue Mining Co., op. cit. See also Van Dyke v. Midnight Sun Mining & Ditch Co., 177 F. 85 (9th Cir. 1910).
- 9/ Alaskan Laws 1917, Ch. 57, Stat. §§ 27.10.080, 38.05.260.
- 10/ Alaska Laws 1966, Ch. 50, Stat. §§ 46.15.010 et. seq..
- 11/ Stat. §46.15.040(a).
- 12/ Stat. §46.15.260(5). The language is taken verbatim from the Alaska Const., Art. VIII, §13, (emphasis added).
- 13/ Alaska Laws 1966, Ch. 50, Stat. §§46.15.010 et. seq..

CHAPTER SIX: Oregon - All That Water But Not A Drop To Use,
Without Appropriation

(a) Surface Waters:

Oregon's early water rights history tracks, in many respects, that of its neighbor California.

Both were admitted to the Union in the same decade.^{1/} In both states, private citizens trespassed on Federal land and appropriated water for their own use. Oregon's early water users were mostly settlers, however, rather than miners.

The Oregon courts, following California's lead, sanctioned the "first in time" principle of water appropriation shortly after the Civil War, providing that the first possessor could prove a local custom to that effect.^{2/} This was later simplified to eliminate the need for proof as the courts of the state took "judicial notice" of the historic and universal application of such a practice within the state.^{3/} These holdings were restricted to public lands, however, under early State court decisions construing the Federal statutes of 1866, 1870 and 1877.^{4/} In 1891, the state legislature finally enacted a statute authorizing appropriation on all lands under either federal laws or local customs.^{5/} All controversies were to be settled by reference to the respective dates of first appropriation.^{6/} With this enactment the Oregon-California analogy begins to break down rather severely.

In 1909, Oregon passed its first Water Rights Act,^{7/} a purely

appropriative statute. It applied only to surface waters, i.e., watercourses. Although the existence of riparian rights had been confirmed by the State Supreme Court on numerous occasions throughout the second half of the 19th Century,^{8/} the Oregon Supreme Court had preceded the legislature in opting for the appropriative system over the common law rule of riparianism. A year before the passage of the Water Rights Act, that court held that the federal statutes referred to above had abrogated the common law with respect to all public lands, not just those covered by the Desert Land Act of 1877.^{9/} Thus no riparian rights could be created after 1877. The court had earlier stressed the incompatibility of the two systems^{10/} and held shortly thereafter that a landowner claiming both appropriative and riparian rights had to choose between them if they wished court adjudication of conflicting parties' claims.^{11/}

For our purposes, the judicial and legislative developments of 1908-1909 are significant for their strongly pro-appropriative policy decisions. Unlike California, where riparian and appropriation systems exist side by side, thus opening the door for the theory of overlying landowner rights to percolating ground waters (a doctrine basically analogous to riparian rights in surface watercourses), Oregon was casting its lot solely with the appropriative system, and overlying it with a heavy regulatory motif.^{12/} Since 1909, appropriation by the prescribed permit procedure has been the only method of obtaining watercourse rights in Oregon.^{13/}

In 1931, a separate statute was passed to authorize appropriation of surface waters for hydroelectric purposes.^{14/} This act does not apply to the U.S., cities, towns, P.U.D.s or municipal corporations.^{15/} Previously, under the 1891 statute, water use for the development of mineral resources and the furnishing of electric power for all purposes was declared a "public and beneficial use."^{16/}

(b) Ground Waters: Pre-1955

In 1876, the Oregon Supreme Court held that an riparian landowner had no rights to ground water in an unknown and un-^{17/}defined channel. The Court then adopted the American version of the English rule on these percolating ground waters.

Later cases, including one in 1942, found the presence of definite underground streams and therefore the overlying landowners had no rights therein.^{18/} Thus the state of the law relating to ground water rights as of the 1950's in Oregon was identical to that in California. Overlying landowners had rights in percolating ground waters, but definite underground streams were subject to appropriative (or pre-1909 perfected riparian) rights. There had been a 1927 ground water appropriation enactment^{19/} but it did not apply to percolating ground waters. Had this state of legal affairs continued to the present, it would have allowed geothermal developers in Oregon the same freedom from appropriation procedures and conflicts that may exist in California.

(c) Ground Water Act of 1955:

The 1955 Act is an extremely comprehensive statute^{20/} which covers "all ground waters of the State [except] capillary moisture, under the land surface or under the bed of any stream, lake, reservoir . . . whatever may be the geological formation or structure in which such water stands, flows, percolates or otherwise moves."^{21/} There is also a strong legislative statement of public control over "all water within this state from all sources of supply."^{22/}

As with Alaska's 1966 statute,^{23/} there are some minor exceptions to the 1955 Oregon law. But they do not, unfortunately, apply to "mineral waters." Excepted uses include: (1) water for a one-half acre lawn or non-commercial garden; (2) no more than 15,000 gallons a day for a single or group domestic use; and (3) no more than 5,000 gallons a day for a single industrial or commercial use."^{24/} Thus a non-electric geothermal use could escape Oregon's ground water appropriation procedures, but an electric generating plant would seemingly have no choice but to comply. This appears particularly likely when one remembers that hydroelectric users have had to appropriate their water since 1931.^{25/}

It is also interesting to juxtapose Oregon's 1955 ground water law with its current geothermal definitional statutes. The latter contain a temperature cut-off point of less than 250° F. and a well-depth cut-off of less than 2000 feet.^{26/}

Clearly this was meant to protect what they have arbitrarily decided are "non-geothermal" ground waters and preserve them for appropriation under the 1955 Act, even when they could be useful for direct use. This impression is strengthened by a second subsection of the geothermal statute. It excludes "such fluids [that] have been appropriated pursuant to ORS 537.505 to 537.795" ^{27/} (the ground water act).

Oregon seems to have gone to great lengths to entangle geothermal development in the state in its existing ground water appropriation scheme. In fact, until passage of the statute just cited, geothermal well drillers had to obtain water well drilling permits. ^{28/}

This is indeed unfortunate, for the legislature has also granted "ownership rights to geothermal resources . . . [to] the owner of the surface property underlain by the geothermal resources" ^{29/} In the absence of the artificial distinctions drawn between geothermal and non-geothermal fluids and in the absence of the 1955 ground water law, both the percolating ground waters and the geothermal resources would belong to the overlying landowner, the former by judicial decision ^{30/} and the latter by legislative enactment. But the state's ground water appropriation posture is so strong that it may also have been the basis for the inclusion in the geothermal ownership statute of the following sentence: "However, nothing in this section shall divest the people or the state of any

rights, title or interest they may have in geothermal resources.^{31/}
This is a strong echo of the statement of absolute public
control over ground waters found in the 1955 act.^{32/}

Under current Oregon law, then, geothermal development of either fluids below 250° F or fluids above that temperature that have already been appropriated will run, respectively, into Oregon's complex permit procedures for ground water appropriation or its administrative system of adjudicating those rights.

Of particular consequence to geothermal development may be the authority of the State Engineer to establish a "critical ground water area" whenever "he has reason to believe that:

(1) ground water levels in the area are declining, or have declined excessively; (2) the wells of two or more claimants within the area substantially interfere with each other;

(3) the available ground water supply . . . is overdrawn or about to be overdrawn; (4) the purity of the water in the area is about to be harmed."^{33/}

Public hearings are called and the State Engineer may limit withdrawals among all users in the area, rotate use, enjoin certain uses, seal any well or wells or establish preferences.^{34/} The Engineer's findings are filed with the relevant state circuit court and, as modified by the court, are conclusive as to the rights of all claimants.

No serious geothermal developer wants to open himself up for this type of adjudicative free-for-all, particularly when

he is probably going to be the most recent (junior) appropriator.

The state's preference system for water uses is also of little solace to geothermal's hopes. Human consumption is first, livestock second and everything else third "in an order consistent with the public interest."^{35/}

Oregon is not likely to dismantle its ground water appropriation procedure for geothermal's benefit. It would be wiser for geothermal developers to seek an amendment to the 1975 geothermal statute. Such an amendment would: (1) strike §522.025(2), relating to already appropriated waters; and (3) strike the "However" sentence of §522.035 and replace it with a statement that the "surface or overlying landowners geothermal resource rights shall be not less than those accruing at common law to landowners overlying percolating ground waters, without need for appropriation under ch. 537." The 250 F. temperature cut off should also be eliminated from §522.025(1), since the resource owners would no longer need to appropriate geothermal resources of any temperature.

There is an exception in the Oregon ground water appropriation state for "seepage or spring waters".^{36/} The owner of the land upon which these waters "first arise shall have the right to the use of such waters."^{37/} To the extent geothermal resources are located nearby such occurrences, this provision may be of some help.

CHAPTER SIX FOOTNOTES

- 1/ 11 Stat. 383 (1859), approved by the President on Feb. 14, 1859.
- 2/ Lewis v. McClure, 8 Oreg. 273 (1880).
- 3/ Speake v. Hamilton, 21 Oreg. 3, 26 P. 855 (1890).
- 4/ Curtis v. LaGrande Water Co., 20 Oreg. 34, 23 P. 808 (1890);
Simmons v. Winters, 21 Oreg. 35, 27 P. 27 (1891).
- 5/ Oreg. Laws 1891, p. 52.
- 6/ id.
- 7/ Oreg. Laws 1909, Ch. 216, now Oreg. Rev. Stat. §537.010 et. seq. (1973). The statute was upheld in Haugh v. Porter, infra, and by the U.S. Sup. Ct. in Calif. Oregon Power Co. v. Beaver Portland Cement Co. 295 U.S. 142 (1935).
- 8/ See Taylor v. Welch, 6 Oreg. 198 (1876); Shively v. Hume, 10 Oreg. 76 (1881); Shook v. Colohan, 12 Oreg. 239, 6 P. 503 (1885).
- 9/ Hough v. Porter, 51 Oreg. 318, 95 P. 732 (1908).
- 10/ North Powder Mill Co. v. Coughanour, 34 Oreg. 9, 54 P. 223 (1898).
- 11/ Williams v. Altkow, 51 Oreg. 275, 95 P. 200 (1908).
- 12/ See Water Rights Law, op. cit., at Vol. III, pp. 444-452 for a full description of the permit process which must be undergone in Oregon in order to secure a valid appropriation from the State Engineer.
- 13/ Staub v. Jensen, 180 Oreg. 682, 178 P. 2d 931 (1947).
- 14/ Laws 1931, Ch. 67, now Oreg. Rev. Stat., Ch. 543, §§543.010 to 543.620 and 543.990.

Chapter Six Footnotes

15/ id.

16/ Oreg. Laws 1899, §1, P. 172, Oreg. Rev. Stat. §541.110.

17/ Taylor v. Welch, 6 Oreg. 198 (1876).

18/ Hayes v. Adams, 109 Oreg. 51, 218 P. 933 (1923);
Bull v. Siegrist, 169 Oreg. 180, 126 P. 2d. 832 (1942).

19/ Oreg. Laws 1927, Ch. 410.

20/ Oreg. Laws 1955, Ch. 708, now Oreg. Rev. Stat.
§§537.505.795.

21/ Oreg. Rev. Stat. §537.515(3).

22/ Oreg. Rev. Stat. §537.525.

23/ Discussed in Chap. IV, above.

24/ Oreg. Rev. Stat. §537.545.

25/ See discussion, above, and fn. 13.

26/ Oreg. Rev. Stat. §522.025(1), Oreg. Laws 1975, Ch. 552, §4.

27/ Oreg. Rev. Stat. §522.025(1), Oreg. Laws 1975, Ch. 552, §4.

28/ See former Ore. Rev. Stat. Ch. 522, Oreg. Laws 1971, Ch. 776.

29/ Ore. Rev. Stat. §522.035, Oreg. Laws 1975, Ch. 552, §21.

30/ Taylor v. Welch, op. cit..

Chapter Six Footnotes

31/ Ore. Rev. Stat. §522.035.

32/ Ore. Rev. Stat. §537.525.

33/ Water Rights Law, op. cit., at Vol. III, p. 470. (emphasis added) citing Ore. Rev. Stat. 537.713.

34/ Ore. Rev. Stat. §537.735.

35/ Ore. Rev. Stat. §536.310(12).

36/ Ore. Rev. Stat. §537.800, formerly §537.710.

37/ id.. See also Staub v. Jensen, op. cit., and Barker v. Sonner, 135 Ore. 75 (1931).

CHAPTER SEVEN: Washington — The Problem of Appropriation
Revisited

The water rights laws of the State of Washington confront geothermal developers with a problem achingly similar to that posed in Oregon. As of 1973, percolating ground waters must be appropriated by permit from the Department of Ecology.^{1/} Worse, "geothermal resources" are defined as the property of the surface owner, as in Oregon."^{2/} Thus the medium and low temperature resources in particular are caught in an unfortunate legal paradox.

(a) Surface Waters:

Washington's water rights history had been pointing in this direction for nearly a century. Only California preceded it in enacting appropriation legislation for surface waters. Three such statutes were enacted between 1873 and 1886 when the area was still a territory. Two related to specific counties,^{3/} while a third generally authorized watercourse appropriation for mining or manufacturing purposes statewide.^{4/} These two uses, as well as irrigation, were declared "public" (i.e., beneficial) uses by the State's first Constitution.^{5/}

Court decisions in Washington state during this period recognized the appropriative right on public domain lands in the Territory as a result of the oft-noted 1866 Congressional enactments.^{6/} In fact, an 1897 decision restricted that right

to those lands.^{7/} As in California, Alaska and Oregon, local customs provided the only method of securing appropriative rights.^{8/}

The first meeting of the state legislature set out a statutory procedure for irrigation purposes only^{9/} and extended it a year later to the most common uses.^{10/} At the same time, however, the legislature acknowledged the validity of riparian rights.^{11/} The state's high court concurred one year later.^{12/}

As in Oregon, however, there was movement early in this century to restrict the riparian right in favor of a tightly regulated appropriative scheme. Key events here included a 1917 statute setting up an administrative system for control of all the states waters as the exclusive avenue for obtaining appropriative rights.^{13/} Landownership, of course, was irrelevant.

The judiciary again went along with this legislative policy choice. In 1923 prior appropriators were held to have rights superior to riparian landowners on former public lands.^{14/} That same year saw a decision which required "beneficial use" by the riparian owner "within a reasonable time."^{15/}

(b) Ground Waters:

A similar scenario was found in the ground water arena. The overlying landowners right to percolating ground water use was recognized in an early decision of the State Supreme Court.^{16/} The American rule of "reasonable use" of such waters was subsequently adopted in a 1913 case.^{17/} Finally, the presump-

tion that ground waters are percolating in the absence of "clear and convincing" proof to the contrary was enunciated in 1935 in the case of Evans v. Seattle.^{18/}

As with the riparian right in watercourses, however, strong appropriation legislation was in the offing. In 1945, a ground water appropriation statute was enacted to "extend . . . the application of . . . [the 1917] surface water statute to the . . . use of ground waters within this state."^{19/} Though there are exceptions they do not appear to offer any help to the geothermal developer. Stock-watering, small domestic uses, lawn and garden watering, and industrial uses not exceeding 5,000 gallons per day are included.^{20/} Clearly electric use would not qualify. Until 1979, such a use was the only one contemplated by Washington's geothermal statute.^{21/}

The State Supreme Court proved to be a strong bastion of private, overlying landowner rights for several decades however. Had they won out, the picture for geothermal would be brighter. As late as 1969, e.g., the Court held: "in Evans v. Seattle [cite], we definitely aligned Washington with those states recognizing the correlative rights of landowners in the percolating water underneath their lands."^{22/} They then went on to state: "That there is a property right (correlative though it may be) in percolating waters is well established."^{23/} One year later, the Court noted the 1945 legislation but, as in Ponten,^{24/} seemed to find it inapplicable to percolating ground waters.

The legislature responded to the Court in 1973 by amending its 1945 ground water appropriation statute to include "all waters that exist beneath the land surface or beneath the bed of any stream . . . whatever may be the geological formation or structure in which such water stands or flows, percolates or otherwise moves."^{25/} Just in case the message was unclear, they also added the following: "It is the purpose of this . . . act . . . to reaffirm the intent of the legislature that 'ground waters' as defined . . . means all waters . . . beneath the land surface, and to remove any possible ambiguity which may exist as a result of . . . State v. Ponten [cite], or otherwise with regard to the meaning of 'ground waters' in the present wording of RCW 90.44.035.

. . . [This] definition . . . accords with the interpretation given by all of the various administrative agencies . . . since . . . 1945."^{26/} Point, game, set and match to the legislature.

We shall not here belabor the intricacies of the Washington ground water appropriation permit system that a geothermal developer will clearly face for non-electric uses greater than 5,000 gallons a day and probably face for electric uses if a neighboring appropriator feels that the geothermal pumping will damage his vested water rights.^{27/} Suffice to say it is not a promising outlook, nor one in which either the geothermal operator or prospective user will feel comfortable. Given the agencies and interests involved, it is also not one that either

is likely to win.

As with Oregon, what is needed in Washington is
a clear, statutory statement that geothermal resources
are not "ground waters" within the meaning of RCWA §90.44.035,

CHAPTER SEVEN FOOTNOTES

- 1/ Wash. Laws 1973, Ch. 94, R.C.W.A. §90.44.035.
- 2/ S.2191 (1979), Wash. Laws 1979, amending R.C.W.A. §79.76.030(1).
- 3/ Wash. Laws 1873, p. 520 (Yakima County, and Wash. Laws 188586, p. 508 (Yakima and Kittitas Counties).
- 4/ Wash. Laws 1879, p. 124, §1.
- 5/ Wash. Const. art. 21, §1. Statehood was conferred on Nov. 11, 1889 (See 26 Stat. 1552 (1889)).
- 6/ Thorpe v. Tenen Ditch Co., 1 Wash. 566, 20 P. 588 (1889).
- 7/ Benton v. Johncox, 17 Wash. 277, 49 P. 495 (1897).
- 8/ Ellis v. Pomeroy Improvement Co., 1 Wash. 572, 21 P. 27 (1889).
- 9/ Wash. Laws 1889-90, Ch. 21.
- 10/ Wash. Laws 1891, Ch. 142.
- 11/ id..
- 12/ Crook v. Hewitt, 4 Wash. 749, 31 P. 28 (1892).
- 13/ Wash. Laws 1917, Ch. 117.
- 14/ In re Doan Creek, 125 Wash. 14, 215 P. 343 (1923).
- 15/ Brown v. Chase, 125 Wash. 542, 217 P. 23 (1923). See also State v. American Fruit Growers, Inc., 135 Wash. 156, 237 P. 498 (1925).

Chapter Seven Footnotes

- 16/ Meyers v. Tacoma Light & Water Co., 8 Wash. 144, 35 P. 601 (1894).
- 17/ Patrick v. Smith, 75 Wash. 407, 134 P. 1076 (1913).
- 18/ 182 Wash. 450, 47 P.2d 984 (1935).
- 19/ Wash. Laws 1945, Ch. 263, §1, p. 826; R.C.W.A. §90.44.020, et. seq..
- 20/ R.C.W.A. §90.44.050.
- 21/ R.C.W.A. §79.76.030(1), Wash. Laws 1st Ex. Sess. 1974, Ch. 43, §3.
- 22/ State v. Ponten, 77 Wash (3d) 463, 463 P. 2d 150 (1969).
- 23/ 463 P. 2d. at pp. 155-156.
- 24/ In re Stranger Creek & Tributaries In Stevens County, 77 Wash. 2d 649, 466 P.2d 508 (1970).
- 25/ Wash. Laws 1973, Ch. 94, §2; R.C.W.A. §90.44.035 (emphasis added).
- 26/ id.
- 27/ See R.C.W.A. §90.44.020 et. seq. for the details.

CHAPTER EIGHT: Hawaii — An Ancient Water Rights System
Meets A Modern Resource

Hawaii's system of water rights is a mixture of ancient rights tied closely to land title and modern concerns over precipitous decreases in ground water basins. The mix is heavily weighted toward the former, however. For geothermal purposes, the "old way" may well be the best.

(a) The Ancient System of Water Rights:

Without belaboring the reader with unnecessarily arcane details we shall sketch the framework of the ancient Hawaiian water rights scheme. It has existed virtually unchanged for centuries. Basically, all land belonged to the King. Water rights were based strictly on land ownership as well. After the King gave most of his lands to the chiefs and people, water rights accrued to the new owners, or in some cases to the possessors of the distinct land units that were created.^{1/} The latter include:

(1) The Akupuaa: These varied from 1,000 to in excess of 100,000 acres. The King conveyed these to his various chiefs, or "konokikis."

(2) The ili: This meant either: a subdivision of an akupuaa made by a konokiki to a member of his clan; or a reservation by the King himself of certain parcels or of mineral or water rights. The latter were much the

same as our concept of mineral-severed lands. If the ili was reserved by the King it was called an ili kupo;no;

(3) The Kuleana: After King Kamehameha IV made the first great voluntary division, or "Great Mahele" in 1848, he nonetheless retained the bulk of the lands on the Islands. Immediately thereafter he made a second division.^{2/} This resulted in so many conflicting land claims that a quasi-judicial commission was set up to quiet all land titles.^{3/} This "Land Commission" functioned from 1846 to 1855.^{4/} It was at this time that the land rights of native tenants, or hoaaínas, were adjudicated and the kuleanas created in fee simple. The parallel to the 1866 federal legislation recognizing mining claimants on public lands and allowing them to obtain fee simple is striking.

The greatest portion of the lands were retained, even after the second division, by the King and his successors, the Territorial and State governments. These "crown" or government lands totaled 2.5 million acres. The ahupuaas granted to the konokikis totaled 1.5 million and the more numerous but smaller kuleanas less than 30,000 acres. Nonetheless, even these small parcels were passed to the native tenants with water rights appurtenant to the land.

The konokikis, or chiefs, have been succeeded in turn by less than a dozen large families who control the largest private land holdings in the Islands. For our

purposes, it is important to note that both the small kuleanas and the large ahupuaas were conveyed with their appurtenant water rights intact, even when the specific Crown or Land Commission document in question made no mention of this fact.^{5/} This policy had been established by the legislation governing the divisions.^{6/}

(b) Surface Waters:

As one commentator has summed up the rights to surface waters: "The Hawaiian system of surface water rights is intimately related to the system of land titles. In no jurisdiction . . . is the determination of questions of rights in watercourses more dependent upon the history of combined land and water use . . .".^{7/} Significantly, Hawaii has never had and does not at this time have an appropriation system of water rights in either surface (or ground) waters. Even the riparian right was not recognized until 1917,^{8/} and then only to the surplus freshet (flood) waters of a stream but not to the surplus normal flow.^{9/} The basic surface water right is still that granted by the King.

(c) Ground Waters:

Though Hawaiian courts have held that there is a distinction between rights to water flowing in "definite underground streams" and other ground (presumably percolating) water and also that the burden of proving the existence of such a stream

is upon the person claiming its existence,^{10/} they have never explicitly adopted any specific doctrine with respect to non-artesian, percolating ground waters in any of the cases thus far decided.^{11/} Another case involved artesian ground waters, i.e., those under well pressure.^{12/} Though the English rule of absolute use was clearly rejected in this context and the "doctrine of correlative rights" was somewhat vaguely adopted,^{13/} since purely percolating ground waters were not involved the question remains open.

(d) Ground Water Use Act of 1959:

As in Oregon (1955) and Washington (1945), Hawaii has passed legislation to regulate ground water use. But Hawaii's statute does not pertain to obtaining ground water rights, only to the powers of the State Board of Land and Natural Resources to designate "critical ground water areas."^{14/} The statute applies to "all water under the earth's surface, whether or not in perched supply, dyke-confined, flowing or percolating in underground channels or streams, under artesian pressure or not, or otherwise."^{15/}

Since it is not a general appropriation scheme, however, the administrative mechanism set up by the Act applies only to areas designated by the Board "in order to prevent threat of exhaustion, depletion, waste, pollution, or deterioration by salt enroachment . . .".^{16/} The statute also forbids the creation of prescriptive rights to any of the State's ground

^{17/}
waters.

Thus a geothermal developer in Hawaii may be on fairly firm ground. Percolating ground water rights appear to reside in the overlying landowners, and clearly no prescriptive rights may be obtained by non-overlying users. There is also no administrative appropriation system whatsoever for the State's ground waters.

Only in a "designated ground water area" will water regulation ensnarl geothermal development. Thus far, these areas are mainly on Oahu. The island of Hawaii (Big Island), situs of the early geothermal interest, seems to have no problems in this regard. The ownership of the state's geothermal resources has been declared to be the property of the State.^{18/} In a reverse of most mainland practice, the operator will need a public geothermal lease from the State on private lands, but private landowners should be able to convey to him the use of percolating ground water rights, if that be deemed necessary to geothermal utilization, without interference from the State.

Should a geothermal well be sited in a "designated ground water area", however, it will probably have to obtain both a geothermal well permit and a permit to drill from the same state agency under the Ground Water Use Act.

CHAPTER EIGHT FOOTNOTES

- 1/ For an excellent discussion of this topic, see the full treatment in Water Rights Law, op. cit., at Vol. II, Ch. 12, "The Ancient Hawaiian Water Rights", pp. 172-190.
- 2/ In re Estate of His Majesty King Kamehameha IV, 2 Haw 715 (1864).
- 3/ Haw. Laws 1846, p. 107.
- 4/ Haw. Laws 1854, p. 21.
- 5/ Carter v. Territory of Hawaii, 24 Haw. 47 (1917). See also Peck v. Bailey, 8 Haw. 658 (1867); Jones v. Meek, 2 Haw. 9 (1857); and Bishop v. Mahiko, 35 Haw. 608 (1940).
- 6/ Haw. Laws 1846, §7, pp. 107, 109.
- 7/ Water Rights Law, op. cit., Vol. III, at p. 244.
- 8/ Carter v. Territory of Hawaii, op. cit..
- 9/ Territory of Hawaii v. Gay, 31 Haw. 376 (1930), affd; 52 Fed. 2d 356 (9th Cir. 1931), cert. den., 284 U.S. 677 (1931).
- 10/ Palolo Land Improvement Co. v. Territory of Hawaii, 18 Haw. 30 (1906). See also Davis v. Afong, 5 Haw. 216 (1884); Wong Leong v. Irwin, 10 Haw. 265 (1896).
- 11/ id.
- 12/ City Mill Co. v. Honolulu Sewer & Water Commission, 30 Haw. 912 (1929).
- 13/ id.
- 14/ Haw. Rev. Stat. §177-1 et. seq.. Haw. Laws 1959, Ch. 274, reenacted following statehood (on Aug. 21, 1959) by Haw. Laws 1961, Ch. 122, §1.

Chapter Eight Footnotes

15/ Haw. Rev. Stat. §177-2(6) (emphasis added).

16/ Haw. Rev. Stat. §177-2(3).

17/ Haw. Rev. Stat. §§177-3.

18/ Haw. Rev. Stat. §178-1.